

Social class, health & life course: ideas from the Boyd Orr Cohort Study.

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Social determinants to biomarkers: general approach.

- Social and biological plausibility are among the requirements of any claim to causality.
- Apply this idea to the relationship between social class and all-cause mortality.
- Specify the aspects of social class, in the spheres of production and consumption, which are known to affect the molecules, cells and tissues of the body.

Aspects of social class.

Sphere of production:

- Occupational fumes & dusts.
- Physically arduous work & accidents.
- Work control.

Sphere of consumption:

- Residential accommodation (crowding, damp & cold, air pollution in locality).
- Nutrition.

Boyd Orr Cohort Study.

- Rowett Research Institute; John Boyd Orr; Stephen Frankel, GDS & DG; Walter Duncan; ONS; study participants.
- Original study: child nutrition and health; GB “representative”; 1937-39.
- Follow-up study: re-contacted mid-1990s; postal questionnaire plus sub-samples (physical examination; lifegrid).

Lifegrid sub-sample.

- Random sample of Boyd Orr Cohort, stratified by childhood affluence (N=300).
- Late 1930s survey data: housing & parental employment; household food inventory; clinical examination.
- Late 1990s lifegrid sub-sample: retrospective data collected by lifegrid; anthropometry, lung function, blood pressure.

Measurement.

- Lifegrid established order and duration of each occupation and residence.
- Once these sequences were recorded, each occupation and residence was re-visited via a showcard of direct and indirect indicators (eg. people per room vs extractor fans & fume cupboards).
- Exposures were categorised as *probable*, *possible* or *none*.

Accumulated hazard exposures and the life course.

- Child health and social circumstances predicted forwards to the life course accumulated hazard scores.
- Gender and class differences in accumulated hazard scores matched all-cause mortality.
- Social circumstances after retirement predicted backwards to the life course accumulated hazard scores.

Summary: the start of an exciting journey.

- The Boyd Orr lifegrid sub-sample was an early attempt to investigate social class differences in health in a way that was both socially and biologically plausible.
- Since then in many respects the situation has become more favourable: larger, more representative studies; sometimes prospective as well as retrospective data; a wider range of biological measures, sometimes repeated, combined with high quality social measures.
- Against these advances are on-going restrictions on data access and a systematic neglect of the structural, health-relevant aspects of social class.

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